We claim:

1. A method of facilitating recovery of nuclear fuel from a fuel pool, comprising:

providing a graphical user interface that allows a user to selectively populate a loading map with fuel bundles residing in at least one fuel

5   pool.

2. The method of claim 1, further comprising:

storing at least one fuel pool database, the fuel pool database including a list of at least a portion of the fuel bundles residing in the fuel pool; and wherein

10   the providing step provides a graphical user interface that allows the user to select fuel bundles from the fuel pool database to populate the loading map.

3. The method of claim 2, wherein the fuel pool database indicates one or more attributes for the listed fuel bundles.

15   4. The method of claim 3, wherein the attributes include at least one of exposure, a previous cycle in which the fuel bundle was used, k infinity, bundle product line, initial uranium loading, initial gadolinium loading, number of axial zones, historical fuel cycle numbers previous to a most recent for which the fuel bundle was used,

a corresponding reactor core in which the fuel bundle was resident for each of the historical fuel cycles, accumulated residence time, and fuel bundle pedigree, which is a parameter that reflects usability of the fuel bundle for continued reactor operation.

5   5. The method of claim 2, wherein the providing step provides a graphical user interface that includes one or more fuel pool database management tools for aiding in the selection process.

6. The method of claim 5, wherein

the fuel pool database indicates one or more attributes for the listed
10   fuel bundles; and

at least one of the fuel pool database management tools includes filtering the listed fuel bundles according to at least one of the attributes.

7. The method of claim 5, wherein

15   the fuel pool database indicates one or more attributes for the listed fuel bundles; and

at least one of the fuel pool database management tools includes sorting the listed fuel bundles according to one of the attributes.

8. The method of claim 1, wherein the providing step provides a
20   graphical user interface that includes one or more loading tools.

9. The method of claim 1, wherein the providing step provides a graphical user interface that further allows the user to selectively populate the loading map with different types of fresh fuel bundles.

10. The method of claim 9, further comprising:

5   storing at least one fresh bundle type database, the fresh bundle type database including a list of fresh bundle types; and wherein

the providing step provides a graphical user interface that allows the user to select fresh fuel bundle types from the fresh bundle type database to populate the loading map.

10   11. The method of claim 10, wherein the fresh bundle type database indicates one or more attributes for the listed fresh fuel bundle types.

12. The method of claim 11, wherein the attributes include at least one of mechanical design, average enrichment, number of gadolinia pins, weight percent of gadolinia, axial zones, and k infinity.

15   13. The method of claim 10, wherein the providing step provides a graphical user interface that includes one or more fresh bundle type database management tools for aiding in the fresh fuel bundle type selection process.

14. The method of claim 13, wherein

20   the fresh bundle type database indicates one or more attributes for the listed fresh fuel bundle types; and

at least one of the fresh bundle type database management tools includes filtering the listed fresh fuel bundle types according to at least one of the attributes.

15. The method of claim 13, wherein

the fresh bundle type database indicates one or more attributes for the listed fresh fuel bundle types; and

at least one of the fresh bundle type database management tools includes sorting the listed fresh fuel bundle types according to one of the attributes.

16. The method of claim 9, wherein the providing step provides a graphical user interface that includes one or more fresh bundle type loading tools.

17. The method of claim 1, wherein at least one of the fuel pools is a fuel pool for more than one reactor core.

18. The method of claim 1, wherein the providing step provides a graphical user interface that allows a user to selectively populate a loading map with fuel bundles residing in more than one fuel pool.

19. A method of recovering nuclear fuel from a fuel pool, comprising:

selectively populating a loading map with fuel bundles stored in at least one fuel pool.

20. The method of claim 19, wherein the selectively populating step is performed via a graphical user interface.

21. The method of claim 19, further comprising:

   accessing a fuel pool database that includes a list of at least a

5   portion of the fuel bundles residing in the fuel pool; and wherein

   the selectively populating step allows a user to select fuel bundles from the fuel pool database to populate the loading map.

22. The method of claim 21, wherein the fuel pool database indicates one or more attributes for the listed fuel bundles.

10   23. The method of claim 22, wherein the attributes include at least one of exposure, a previous cycle in which the fuel bundle was used, k infinity, bundle product line, initial uranium loading, initial gadolinium loading, number of axial zones, historical fuel cycle numbers previous to a most recent for which the fuel bundle was used,

15   a corresponding reactor core in which the fuel bundle was resident for each of the historical fuel cycles, accumulated residence time, and fuel bundle pedigree, which is a parameter that reflects usability of the fuel bundle for continued reactor operation.

24. The method of claim 21, further comprising:

20   using one or more fuel pool database management tools to aid in the selectively populating step.

25. The method of claim 24, wherein

the fuel pool database indicates one or more attributes for the listed fuel bundles;

filtering, using a filter fuel pool database management tool, the listed fuel bundles according to at least one of the attributes; and

the selectively populating step allows the user to select from the filtered fuel bundles to populate the loading map.

26. The method of claim 24, wherein

the fuel pool database indicates one or more attributes for the listed fuel bundles; and

sorting, using a sorting fuel pool database management tool, the listed fuel bundles according to at least one of the attributes; and

the selectively populating step allows the user to select from the sorted fuel bundles to populate the loading map.

27. The method of claim 21, further comprising:

using one or more loading tools to aid in the selectively populating step.

28. The method of claim 21, further comprising:

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second selectively populating the loading map with different types of fresh fuel bundles.

29. The method of claim 28, further comprising:

accessing at least one fresh bundle type database, the fresh bundle type database including a list of fresh bundle types; and wherein

the second selectively populating step allows the user to select fresh fuel bundle types from the fresh bundle type database to populate the loading map.

30. The method of claim 19, wherein at least one of the fuel pools is a fuel pool for more than one reactor core.

31. The method of claim 19, wherein the selectively populating step selectively populates a loading map with fuel bundles stored in more than one fuel pool.

32. A method, comprising:

using nuclear fuel bundles residing in at least one fuel pool in a new loading map for a nuclear reactor.

33. An apparatus, comprising:

a computer system configured to provide a graphical user

interface that allows a user to selectively populate a loading map with

fuel bundles residing in at least one fuel pool.

34. A method, comprising:

5   operating a nuclear reactor that includes one or more fuel

bundles recovered from at least one fuel pool.